EQ250

1/3” Color Digital Camera

User’s Manual

and

Operation Instructions

Notice

This manual is presented to the users of EQ250 by EverFocus Electronics Corp. With years of engineering researches, EverFocus has spared no effort to provide the high quality products to the worldwide users. For the policy of continual product improvement, EverFocus reserves the right to make changes to the product specifications and documentation without notice. All the components of the products, including accessories, components, and outlook, are based on the agreements of each deals to satisfy all kinds of users. Meanwhile, please be advised that every step of operation must follow the instruction of this manual to keep EQ250 working under the best condition. Please notice that EverFocus will not be charged any claims or renewing cases resulted from inappropriate operation.

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Safety Warning

1. **Handle the camera with care.**

   Be careful when handling the camera, do not drop it or subject it to strong shock or vibration to prevent any damages to it. Do not disassemble it or place it on an unstable base.

2. **Do not install the camera near electric or magnetic fields.**

   Installed the camera away from TV, radio transmitter, magnet, electric motor, transformer, audio speakers because the magnetic fields generate from above devices will distort the video image.

3. **Do not install the camera in the high temperature environment.**

   Installed the camera away from stoves, or other heat generating devices as the high temperature could cause deformation, discoloration or other damages of the camera. Install the camera at where the temperature range will stay between 0℃ to 50℃ (32℉ to 122℉).

4. **Never face the camera toward the sun.**

   Never aim the camera at the sun or other extremely bright objects whether it is in use or not.

5. **Cleaning**

   Do not touch the surface of CCD sensor by hand directly. Use a soft cloth to remove the dirt from the camera body. Use lens tissue or a cotton tipped applicator and ethanol to clean the CCD sensor and the camera lens. When the camera is not in use, put the cover cap on the lens mount.

Introduction

The new EQ250 series is a solid-state color video camera specially designed for high quality surveillance applications. It incorporates break through DSP technology that provides most reliable and accurate color picture in security industry. The camera is convenient to use with C-mount or CS-mount lenses and easy back-focus adjustment help to achieve installation efficiency.

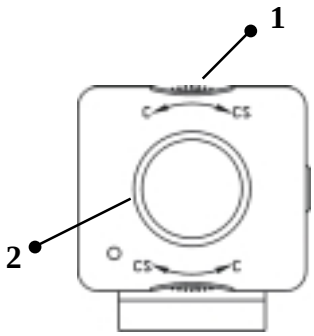
Main Features :

- 1/3” color CCD pick up device for more than 340 TV lines of horizontal resolution
- Sophisticated DSP (Digital Signal Processing) circuitry design that delivers excellent picture quality and performance.
- Wide range automatic electronic shutter: up to 1/100,000
- Auto line lock with external phase adjustment
- Used with either C-mount or CS-mount lenses and easy back-focus adjustment
- System available in NTSC or PAL

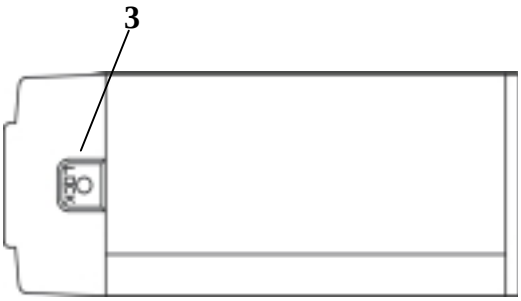
Specification

Pickup Device:	1/3 inch interline transfer color CCD
Picture Element:	NTSC : 510 (H) x 492 (V)
	PAL : 500 (H) x 582 (V)
Horizontal resolution:	NTSC : 380 TV lines
	PAL : 340 TV lines
Sensitivity:	1.0 lux/F=1.2
S/N ratio:	Over 48 dB
Electronic shutter:	1/60(1/50) to 1/100,000
Auto. IRIS:	Video / Direct Drive switch
Auto White Balance:	Digital auto tracing
Flickerless:	Yes
Back Light Comp:	Yes
Electronic Shutter:	On/Off
Auto Gain Control:	On/Off
Line Lock:	On/Off
Gamma Correction:	> 0.45
Video output:	1.0Vp-p,75 ohm
Sync. Mode:	1. Line-Locked with LL on
	2. Internal Sync. with LL off
Lens Mount:	C/CS mount back focus adjustment
Power source:	90-260VAC (EQ250)
	12VDC/24VAC (EQ250A)
Dimension:	51x57x140.2mm
Operating Temperature:	0℃ to +50℃
Power Consumption	5W max

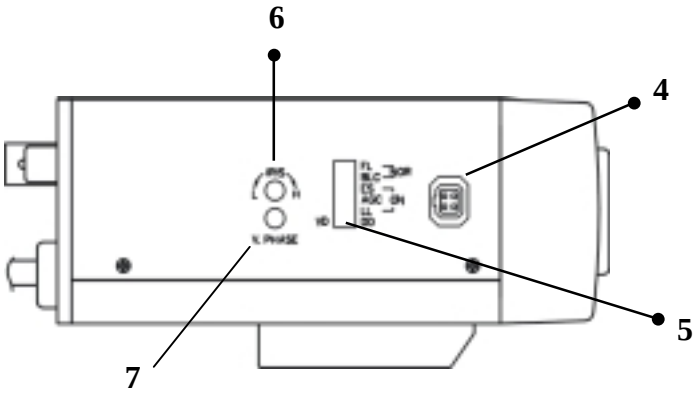
Major Parts Names and Their Functions



Front



Side



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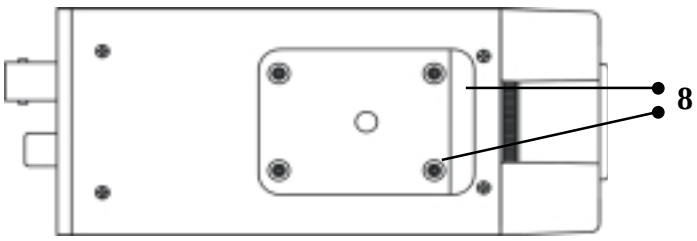
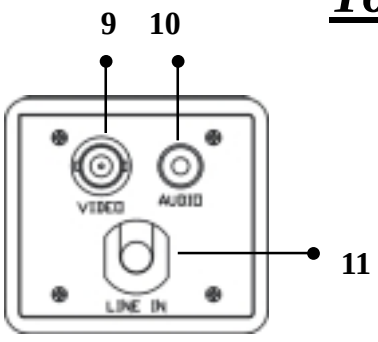
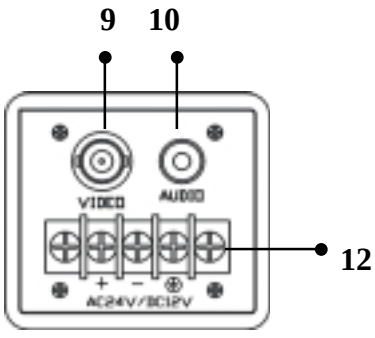


Top



Rear (EQ250)



Rear(EQ250A)

1. Focal Length Adjustment Ring

Use this ring to adjust the appropriate focal length according to the type of lens. Rotate the ring clockwise for the CS-mount lens, rotate it counterclockwise for the C-mount lens. The factory setting is C-mount.

2. Lens Mount

To mount an appropriate C-mount or CS-mount lens.

3. Locking Screw

Use the locking screw to fix the focal length.

4. Lens Connector (4 pin socket)

To connect to the lens plug of the auto IRIS lens.

5. Control Switches

There are 6 control switches located on the sideboard, which are for the setting of the special features. The switches in orders are for Flickerless, Back Light Compensation, Electronic Shutter, Automatic Gain Control, Line-Lock and Auto Iris Lens type.

FL(Flickerless) On/Normal

When picture flicker fiercely, turn FL on, then the camera will stabilize the speed of electronic shutter at 1/100(NTSC) or 1/120(PAL) automatically, and reduce the flicker immediately. The default setting is Normal.

BLC (Back Light Compensation) On/Normal

When BLC is turned on, the AGC, ES and IRIS operating point is determined by averaging over the center area instead of entire field-of-view, so that a dimly-lit foreground object at center area can be clearly distinguished from brightly-lit backgrounds.

BLC should not be used unless it is needed to compensate for back-lit. The default setting is Normal.

ES (Electronic Shutter) Off/On

ES ON: The camera continuously adjusts the shutter speed from 1/60 (NTSC), 1/50 (PAL) second to 1/100,000 second according to the luminance conditions of the scene.

ES OFF: The shutter speed is fixed at 1/60 (NTSC), 1/50 (PAL) second.

Set ES OFF, when auto iris lens is used or flicker is observed under a very bright fluorescent lamp. Otherwise, turn ES on for optimum performance. The default setting is ON.

AGC (Automatic Gain Control) Off/On

AGC ON: The sensitivity increases automatically when light is low.

AGC OFF: A-low-noise picture is obtained under a low light condition.

The default setting is ON.

LL (Line-Lock) Off/On

To select the sync mode between Internal Sync.(LL off) and Line-Lock (LL on).

Set the line-lock off, the camera will synchronize to the internal time base. Set the line-lock on, the camera's vertical synchronization can be driven by the AC signal in the power lines.

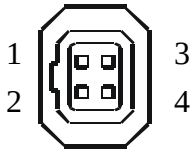
Note: Line-Lock sync mode operation is possible only when used with an AC power source; it's not possible with a DC power source.

VD/DD (Auto Iris lens Type)

For video drive auto iris lens, please set switch to VD. For direct drive iris lens, set switch to DD. The default setting is DD. Wire the cable of lens to lens connector according to the following table.

	Pin1	Pin2	Pin3	Pin4
Video Drive	+12V	GND	VD-IRIS	GND
Direct Drive	Cnt-	Cnt+	Drv+	Drv-

Lens Connector



6. IRIS Level Control

Brightness Level can be adjusted from the IRIS level VR while using the direct drive lens.

- Turn counterclockwise to L to get darker picture.
- Turn clockwise to H to get brighter picture.

7. V-Phase Adjustment

The vertical phase may require adjustment to synchronize the vertical phase of the camera with other camera in the system when it is to be used in the line-lock sync mode. Make the adjustment when the vertical phase of the camera does not match with other cameras.

8. Mounting Base and Fixing Screws

To use when the mounting bracket is required while mounting the camera. The mounting base can be attached to either the top or the bottom of the camera, fix the mounting base onto the camera by using the 4 supplied fixing screws.

9. Video Output Connector

BNC VBS 1.0 Vp-p, 75ohm

10. Audio Out Connector

11. Power Cable (EQ250)

12. DC12V/AC24V Screw Terminals (EQ250A)

Installation Instructions

1. Remove the cover cap from the top of the lens mount.
2. To attach a C-mount/CS-mount lens, turn the focal length adjustment ring to the appropriate position.

   Note: If a C-mount lens is used, please make sure the focal length adjustment ring is set at C position before fixing the lens.
3. Screw the lens firmly onto the lens mount. Insert the lens plug in the lens connector if the auto iris lens is used.
4. Tighten the locking screw.
5. Connect the video output of the camera to a color monitor or other video device through a 75 ohm type coaxial cable with BNC female connector.
6. Plug the power cord to the outlet.
7. Once the image appears on the monitor, adjust the focus and diaphragm of the lens to obtain the best picture.
8. If the subject is not in focus when adjusting focus of lens, do focal length adjustment as following:

   i. Loosen the locking screw of the focal length adjustment ring.

   ii. Take picture of subject at a distance more than 20m away from the camera.

   iii. Rotate the focal length adjustment ring to bring the subject in focus.

   iv. Tighten the locking screw while the adjustment is completed.

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